## Monitoring Frequency for Initial Sampling Requirements

Waterworks Size	Monitoring Type	Location	No. Samples	Frequency
Large Waterworks >100,000	Lead and Copper Water Quality	Taps Distribution System	100 25	6 months Twice per 6 months
	Parameters Source Water Lead and Copper	Entry Points	1	6 months Note 1
50,001-100,000	Water Quality Parameters Lead and Copper Water Quality	Taps Distribution	<u>1</u> 60 10	Twice per 6 months 6 months Twice per 6
	Parameters Source Water Lead and	System Entry Points	10 1	months 6 months Note 1
	Copper Water Quality Parameters		<u>1</u>	Twice per 6 months
Medium	<u>r arametere</u>			- Indiano
<u>Waterworks</u>				
10,001-50,000	Lead and Copper If ALs Exceeded	<u>Taps</u>	<u>60</u>	6 months
	Water Quality Parameters Source Water	Distribution System Entry Points	<u>10</u>	Twice per 6 months
	Lead and Copper		<u>1</u>	6 months
	Water Quality Parameters		<u>1</u>	Twice per 6 months
3,301-10,000	Lead and Copper If ALs Exceeded	<u>Taps</u>	<u>40</u>	6 months
	Water Quality Parameters Source Water	Distribution System Entry Points	<u>3</u>	Twice per 6 months
	Lead and Copper		<u>1</u>	6 months
	Water Quality Parameters		<u>1</u>	Twice per 6 months
Small Waterworks 501-3,300	Lead and Copper	<u>Taps</u>	<u>20</u>	6 months
	If ALs Exceeded			

	Water Quality Parameters Source Water	Distribution System Entry Points	<u>2</u>	Twice per 6 months
	Lead and Copper	Littly Folitis	<u>1</u>	6 months
	Water Quality Parameters		<u>1</u>	Twice per 6 months
<u>101-500</u>	Lead and Copper If ALs Exceeded	<u>Taps</u>	<u>10</u>	6 months
	Water Quality Parameters Source Water	Distribution System Entry Points	<u>1</u>	Twice per 6 months
	Lead and Copper		<u>1</u>	6 months
	Water Quality		<u>1</u>	Twice per 6
<u>≤100</u>	Parameters Lead and Copper Note 1	<u>Taps</u>	<u>5</u>	months 6 months
	If ALs Exceeded Water Quality Parameters Source Water	Distribution System Entry Points	<u>1</u>	Twice per 6 months
	Lead and Copper		<u>1</u>	<u>6 months</u>
	Water Quality Parameters		<u>1</u>	Twice per 6 months
Nontransient	Lead and Copper	<u>Taps</u>	No more	e than one per
Noncommunity	Water Quality	<b>Distribution</b>		per monitoring
<u>Waterworks</u>	<u>Parameters</u>	<u>System</u>		<u>period</u>

Note 1 If system wants to attempt to demonstrate optimization based on difference between source water levels and 90% tap level. Otherwise, one sample per entry point required if an AL is exceeded.

## Monitoring Frequency for Follow-up and Routine Sampling Requirements

Waterworks Size	Monitoring Type	Location	No. Samples	Frequency
Large Waterworks >100,000	Lead and Copper Water Quality Parameters Source Water	Taps Distribution System Entry Points	100 25	6 months Twice per 6 months
	Lead and Copper Water Quality Parameters		1 1	6 months Biweekly
50,001-100,0 00	Lead and Copper	<u>Taps</u>	<u>60</u>	6 months
<u>50</u>	Water Quality Parameters	Distribution System	<u>10</u>	Twice per 6 months
	Source Water Lead and Copper Water Quality Parameters	Entry Points	<u>1</u> 1	6 months Note 1 Biweekly
Medium Waterworks				
10,001-50,00 0	Lead and Copper	<u>Taps</u>	<u>60</u>	6 months
<u>v</u>	Water Quality Parameters Source Water	Distribution System Entry Points	<u>10</u>	Twice per 6 months
	Lead and Copper Water Quality Parameters	<u>Littiy i Oirits</u>	1 1	6 months Biweekly
3,301-10,000	Lead and Copper Water Quality Parameters Source Water	Taps Distribution System Entry Points	<u>40</u> <u>3</u>	6 months Twice per 6 months
	Lead and Copper Water Quality Parameters	<u>Entry Foints</u>	1 1	6 months Note 1 Biweekly
Small Waterworks 501-3,300	Lead and Copper Water Quality Parameters Source Water	Taps Distribution System Entry Points	20 2	6 months Twice per 6 months

	Lead and Copper Water Quality Parameters		1 1	6 months Note 1 Biweekly
<u>101-500</u>	Lead and Copper Note	<u>Taps</u>	<u>10</u>	6 months
	Water Quality Parameters Source Water	Distribution System Entry Points	<u>1</u>	Twice per 6 months
	Lead and Copper Water Quality	<u> </u>	<u>1</u> 1	6 months Biweekly
<u>≤100</u>	Parameters Lead and Copper  1	<u>Taps</u>	<u>5</u>	6 months
	Water Quality Parameters Source Water	Distribution System Entry Points	<u>1</u>	Twice per 6 months
	Source Water Lead and Copper Water Quality Parameters	Entry Points	<u>1</u> 1	6 months Note 1 Biweekly
Nontransient	Lead and Copper	Taps Distribution	No more	e than one per
Noncommunity	Water Quality	System		per monitoring
Water Systems	<u>Parameters</u>			<u>period</u>

Note 1 If source water treatment installed; otherwise, see reduced monitoring requirements.

## Monitoring Frequency for Reduced Sampling Requirements

Matorworks		Poducod	Liltimate Pedused
Wqterworks Size	Monitoring Type	Reduced Monitoring	Ultimate Reduced Monitoring
Large	<u>Morntoning Type</u>	Monitoring	<u> </u>
Waterworks			
>100,000	Lead and Copper	50 per year	50 per 3 years
<u>&gt; 100,000</u>	Water Quality	10 twice per 6	10 twice per year
	Parameters	months	To twice per year
	Points of Entry Lead and		
	Copper		
	Groundwater Supply	1 per 3 years	1 per 9 years
	Surface Water	Annually	1 per 9 years
	Supply	<u> </u>	<u> </u>
	Water Quality	Biweekly	Biweekly
	Parameters		
50,001-100,0	Lead and Copper	30 per year	30 per 3 years
<u>00</u>			
	Water Quality	7 twice per 6	7 twice per year
	<u>Parameters</u>	<u>months</u>	
	Points of Entry Lead and		
	Copper		
	Groundwater Supply	1 per 3 years	1 per 9 years
	Surface Water	Annually	1 per 9 years
	Supply	Divisable	Divocaldo
	Water Quality Parameters	<u>Biweekly</u>	<u>Biweekly</u>
Medium	<u>Farameters</u>		
Waterworks			
10,001-50,00	Lead and Copper	30 per year	30 per 3 years
0	<u> </u>	<u> </u>	<u> </u>
-	Water Quality	7 twice per 6	7 twice per year
	<u>Parameters</u>	months	
	Points of Entry Lead and		
	Copper		
	Groundwater Supply	1 per 3 years	1 per 9 years
	Surface Water	<u>Annually</u>	1 per 9 years
	Supply		
	Water Quality	<u>Biweekly</u>	Biweekly
0.004.40.000	Parameters	20	20 7 27 2 12 2 2
3,301-10,000	Lead and Copper	20 per year	20 per 3 years
	Water Quality Parameters	3 twice per 6	3 twice per year
	Parameters Points of Entry Lead and	<u>months</u>	
	Points of Entry Lead and		

	Copper Groundwater Supply Surface Water Supply Water Quality Parameters	1 per 3 years Annually Biweekly	1 per 9 years 1 per 9 years Biweekly
Small Waterworks 501-3,300	Lead and Copper Water Quality Parameters Points of Entry Lead and	10 per year 2 twice per 6 months	10 per 3 years 2 twice per year
	Copper Groundwater Supply Surface Water Supply Water Quality	1 per 3 years Annually Biweekly	1 per 9 years 1 per 9 years
<u>101-500</u>	Water Quality Parameters Lead and Copper Water Quality Parameters Points of Entry Lead and	5 per year 1 twice per 6 months	Biweekly  5 per 3 years  1 twice per year
	Copper Groundwater Supply Surface Water Supply Water Quality	1 per 3 years Annually Biweekly	1 per 9 years 1 per 9 years Biweekly
<u>≤100</u>	Parameters Lead and Copper Water Quality Parameters Points of Entry Lead and Copper	5 per year 1 twice per 6 months	5 per 3 years 1 twice per year
	Groundwater Supply Surface Water Supply Water Quality Parameters	1 per 3 years Annually Biweekly	1 per 9 years 1 per 9 years Biweekly

## Summary of Monitoring Requirements-for Water Quality Parameters Note 1

Monitoring Period	Parameters Note 2	Location	Frequency
Initial Monitoring	pH, alkalinity, orthophosphate or silica  Note 3, calcium Note 4, conductivity, temperature	Taps and at entry point(s) to distribution system	Every 6 months
After Installation of	pH, alkalinity, orthophosphate or silica Note 3, calcium Note 4	<u>Taps</u>	Every 6 months
Corrosion Control	pH, alkalinity dosage rate and concentration (if alkalinity adjusted as part of corrosion control), inhibitor dosage rate and inhibitor residual	Entry point(s) to distribution system Note 6	No less frequently than every two weeks.
After State Specifies	pH, alkalinity, orthophosphate or silica Note 3, calcium Note 4	<u>Taps</u>	Every 6 months
Parameter Values For Optimal Corrosion Control	pH, alkalinity dosage rate and concentration (if alkalinity adjusted as part of corrosion control), inhibitor dosage rate and inhibitor residual	Entry point(s) to distribution system	No less frequently than every two weeks.
Reduced Monitoring	pH, alkalinity, orthophosphate or silica  Note 3, calcium  Note 4	<u>Taps</u>	Every six months, annually or every 3 years Note 8 reduced number of sites
	pH, alkalinity dosage rate and concentration (if alkalinity adjusted as part of corrosion control), inhibitor dosage rate and inhibitor residual	Entry point(s) to distribution system	No less frequently than every two weeks.

Note 1 Table is for illustrative purposes; consult the text of this section for precise regulatory requirements.

Note 2 Small and medium-size systems have to monitor for water quality parameters only during monitoring periods in which the system exceeds the lead or copper action level.

Note 3 Orthophosphate shall be measured only when an inhibitor containing a phosphate compound is used. Silica shall be measured only when an inhibitor containing silicate compound is used.

Note 4 Calcium shall be measured only when calcium carbonate stabilization is used as part of corrosion control.

Note 5 Inhibitor dosage rates and inhibitor residual concentrations (orthophosphate or silica) shall be measured only when an inhibitor is used.

Note 6 Groundwater systems may limit monitoring to representative locations throughout the system.

Note 7 Waterworks may reduce frequency of monitoring for water quality parameters at the tap from every six months to annually if they maintain the minimum values or range of values for water quality parameters reflecting optimal corrosion control treatment during three consecutive years of monitoring.

Note 8 Waterworks may further reduce the frequency of monitoring for water quality parameters at the tap from annually to once every three years if they have maintained the minimum values or range of values for water quality parameters reflecting optimal corrosion control treatment during three consecutive years of annual monitoring. Waterworks may accelerate the triennial monitoring for water quality parameters at the tap if they have maintained 90th percentile lead levels less than or equal to 0.005 mg/L, 90th percentile copper levels less than or equal to 0.65 mg/L, and the range of water quality parameters designated by the Commissioner under 12 VAC 5-591-420 C 1 f as representing optimal corrosion control during two consecutive six-month periods.